

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

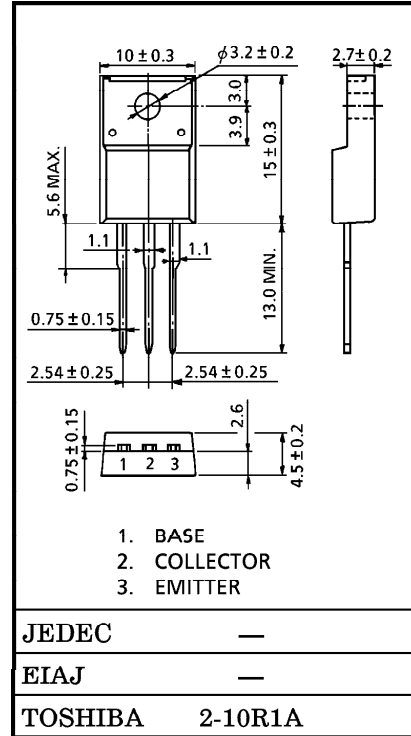
# 2SD1407A

POWER AMPLIFIER APPLICATIONS

- High Breakdown Voltage :  $V_{CEO} = 100V$
- Low Collector Saturation Voltage :  $V_{CE(sat)} = 2.0V$  (Max.)
- Complementary to 2SB1016A

INDUSTRIAL APPLICATIONS

Unit in mm



MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC                                     | SYMBOL    | RATING  | UNIT       |
|--|-----------|---------|------------|
| Collector-Base Voltage                             | $V_{CBO}$ | 100     | V          |
| Collector-Emitter Voltage                          | $V_{CEO}$ | 100     | V          |
| Emitter-Base Voltage                               | $V_{EBO}$ | 5       | V          |
| Collector Current                                  | $I_C$     | 5       | A          |
| Base Current                                       | $I_B$     | 0.5     | A          |
| Collector Power Dissipation ( $T_c = 25^\circ C$ ) | $P_C$     | 30      | W          |
| Junction Temperature                               | $T_j$     | 150     | $^\circ C$ |
| Storage Temperature Range                          | $T_{stg}$ | -55~150 | $^\circ C$ |

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC                       | SYMBOL                | TEST CONDITION                    | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|-----------------------|-----------------------------------|------|------|------|---------|
| Collector Cut-off Current            | $I_{CBO}$             | $V_{CB} = 100V, I_E = 0$          | —    | —    | 100  | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$             | $V_{EB} = 5V, I_C = 0$            | —    | —    | 1    | mA      |
| Collector-Emitter Breakdown Voltage  | $V(BR)_{CEO}$         | $I_C = 50mA, I_B = 0$             | 100  | —    | —    | V       |
| DC Current Gain                      | $h_{FE(1)}$<br>(Note) | $V_{CE} = 5V, I_C = 1A$           | 40   | —    | 240  |         |
|                                      | $h_{FE(2)}$           | $V_{CE} = 5V, I_C = 4A$           | 20   | —    | —    |         |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$         | $I_C = 4A, I_B = 0.4A$            | —    | —    | 2.0  | V       |
| Base-Emitter Saturation Voltage      | $V_{BE}$              | $V_{CE} = 5V, I_C = 1A$           | —    | —    | 1.5  | V       |
| Transition Frequency                 | $f_T$                 | $V_{CE} = 5V, I_C = 1A$           | —    | 12   | —    | MHz     |
| Collector Output Capacitance         | $C_{ob}$              | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | —    | 100  | —    | pF      |

(Note)  $h_{FE(1)}$  Classification R : 40~80, O : 70~140, Y : 120~240

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